

Listing of Claims

1-26. (Canceled)

27. (Previously Presented) A filamentous embolic device, comprising:

a flexible, filamentous carrier formed of a length of wire having an elastic memory and initially configured with a portion forming a looped structure whereby the carrier assumes a three-dimensional shape; and

an embolizing element arranged coaxially around the carrier and non-releasably attached thereto, the embolizing element being formed at least in part of a hydrophilic polymer; said hydrophilic polymer comprising a polymeric structure that incorporates an expansion control component such that said hydrophilic polymer expands volumetrically at a controlled rate in an aqueous environment.

28. (Previously Presented) The device of Claim 27, wherein the carrier comprises a continuous length of microcoil.

29. (Withdrawn) The device of Claim 27, wherein the embolizing element comprises a coating applied to the carrier.

30. (Withdrawn) The device of Claim 29, wherein the coating encapsulates at least a portion of the length of the carrier.

31. (Previously Presented) A vascular embolization device that is deployable intravascularly while attached to the distal end of a deployment instrument, the embolization device comprising:

a flexible, filamentous microcoil having a proximal end and a distal end;

an embolizing element coaxially covering a substantial portion of the length of the carrier between the proximal and distal ends thereof, the embolizing element being made of a hydrophilic polymer; said hydrophilic polymer comprising a polymeric structure that incorporates an expansion control component such that said hydrophilic polymer expands volumetrically at a controlled rate in an aqueous environment; and

a linkage element on the proximal end of the carrier that is releasably attachable to the distal end of the deployment instrument.

32. (Previously Presented) The device of Claim 31, wherein the carrier has an elastic memory and is initially configured in a multi-looped configuration.

33. (Previously Presented) The device of Claim 31, wherein the linkage element is releasable from the deployment instrument by an electric current.

34. (Previously Presented) The device of Claim 31, wherein the linkage element is releasable from the deployment instrument by heat.

35. (Previously Presented) The device of Claim 31, wherein the linkage element is releasable from the deployment instrument by fluid pressure.

36-55. (Canceled)

56. (Previously Presented) A vascular embolization device, comprising:

a flexible, filamentous carrier that assumes a three-dimensional configuration when unconstrained, the carrier having an exterior surface and a distal tip; and

a stretch-resistant embolizing element non-releasably fixed to the exterior surface of the carrier at a location proximal from the distal tip, wherein the embolizing element is formed at least in part of a hydrophilic polymer; said hydrophilic polymer comprising a polymeric structure that incorporates an expansion control component

such that said hydrophilic polymer expands volumetrically at a controlled rate in an aqueous environment.

57. (Previously Presented) A device for embolizing a vascular site, comprising:
a flexible, filamentous carrier; and

an expansible embolizing element non-releasably carried on the carrier, the embolizing element including an agent selected from the group consisting of bioactive agents and therapeutic agents, wherein the embolizing element; said embolizing element comprising a polymeric structure that incorporates an expansion control component such that said embolizing element exhibits a delayed volumetric expansion when exposed to an aqueous environment.

58. (Previously Presented) The device of Claim 57, wherein the embolizing element is expansible primarily by hydrophilic action.

59. (Previously Presented) The device of Claim 57, wherein the carrier includes a radiopaque material.

60. (Canceled)

61. (Previously Presented) The device of Claim 57, wherein the embolizing element is radiopaque.

62. (Previously Presented) A device for embolizing a vascular site, comprising:

a carrier of predetermined length, comprising a flexible filament and a microcoil coaxially surrounding the filament; and

an embolizing element arranged coaxially on the carrier and non-releasably attached thereto, the embolizing element substantially continuously covering at least a portion of the length of the carrier, the embolizing element comprising a hydrophilic

polymer; said hydrophilic polymer comprising a polymeric structure that incorporates an expansion control component such that said hydrophilic polymer expands volumetrically at a controlled rate in an aqueous environment.

63. (Canceled)

64. (Withdrawn) The device of Claim 62, wherein the microcoil is made at least in part of platinum.

65. (Withdrawn) The device of Claim 62, wherein the carrier is formed into a looped structure that, when unconstrained, assumes a configuration selected from the group consisting of a helix, a sphere, and an ovoid.

66. (Withdrawn) The device of Claim 62, wherein the embolizing element is stretch-resistant.

67. (Withdrawn) The device of Claim 62, wherein the filament is made from a material selected from the group consisting of at least one of a metal and a polymer.

68. (Previously Presented) A filamentous embolic device, comprising:

a flexible, filamentous carrier formed of a length of wire having an elastic memory and initially configured with a portion forming a looped structure whereby the carrier assumes a three-dimensional shape; and

an embolizing element arranged coaxially around the carrier and non-releasably attached thereto, the embolizing element being formed at least in part of a hydrophilic polymer; said hydrophilic polymer comprising a polymeric structure that incorporates an expansion control component such that said hydrophilic polymer exhibits a delayed volumetric expansion when exposed to an aqueous environment.

69. (Previously Presented) The device of Claim 68, wherein the carrier comprises a continuous length of microcoil.

70. (Previously Presented) The device of Claim 68, wherein the embolizing element comprises a coating applied to the carrier.

71. (Previously Presented) The device of Claim 70, wherein the coating encapsulates at least a portion of the length of the carrier.

72. (Previously Presented) The device of claim 27, wherein said expansion control component comprises ionizable functional groups.

73. (Previously Presented) The device of claim 31, wherein said expansion control component comprises ionizable functional groups.

74. (New) The device of claim 56, wherein said expansion control component comprises ionizable functional groups.

75. (Previously Presented) The device of claim 57, wherein said expansion control component comprises ionizable functional groups.

76. (Previously Presented) The device of claim 62, wherein said expansion control component comprises ionizable functional groups.

77. (Previously Presented) The device of claim 68, wherein said expansion control component comprises ionizable functional groups.